U.S. FISH AND WILDLIFE SERVICE
SPECIES ASSESSMENT AND LISTING PRIORITY ASSIGNMENT FORM

SCIENTIFIC NAME: *Erigeron basalticus*

COMMON NAME: Basalt daisy

LEAD REGION: Region 1

INFORMATION CURRENT AS OF: November 07, 2005

STATUS/ACTION

___ Species assessment - determined we do not have sufficient information on file to support a proposal to list the species and, therefore, it was not elevated to Candidate status
___ New candidate
_X_ Continuing candidate
___ Non-petitioned
_X_ Petitioned - Date petition received: 07/01/1975
__ 90-day positive - FR date:
_X_ 12-month warranted but precluded - FR date: 10/25/1999
___ Did the petition request a reclassification of a listed species?

FOR PETITIONED CANDIDATE SPECIES:
a. Is listing warranted (if yes, see summary of threats below)? YES
b. To date, has publication of a proposal to list been precluded by other higher priority listing actions? YES
c. If the answer to a. and b. is "yes", provide an explanation of why the action is precluded. We find that the immediate issuance of a proposed rule and timely promulgation of a final rule for this species has been, for the preceding 12 months, and continues to be, precluded by higher priority listing actions (including candidate species with lower LPNs). During the past 12 months, almost our entire national listing budget has been consumed by work on various listing actions to comply with court orders and court-approved settlement agreements, meeting statutory deadlines for petition findings or listing determinations, emergency listing evaluations and determinations, and essential litigation-related, administrative, and program management tasks. We will continue to monitor the status of this species as new information becomes available. This review will determine if a change in status is warranted, including the need to make prompt use of emergency listing procedures. For information on listing actions taken over the past 12 months, see the discussion of "Progress on Revising the Lists," in the current CNOR which can be viewed on our Internet website (http://endangered.fws.gov/).

___ Listing priority change
Former LP: ___

New LP: ___

Date when the species first became a Candidate (as currently defined):

__ Candidate removal: Former LPN: ___

__ A – Taxon is more abundant or widespread than previously believed or not subject to the degree of threats sufficient to warrant issuance of a proposed listing or continuance of candidate status.

___U – Taxon not subject to the degree of threats sufficient to warrant issuance of a proposed listing or continuance of candidate status due, in part or totally, to conservation efforts that remove or reduce the threats to the species.

___ F – Range is no longer a U.S. territory.

___ I – Insufficient information exists on biological vulnerability and threats to support listing.

___ M – Taxon mistakenly included in past notice of review.

___ N – Taxon does not meet the Act's definition of "species."

___ X – Taxon believed to be extinct.

ANIMAL/PLANT GROUP AND FAMILY: Flowering plants, *Asteraceae* (Sunflower family)

HISTORICAL STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: Washington

CURRENT STATES/COUNTIES/TERRITORIES/COUNTRIES OF OCCURRENCE: Washington; Yakima and Kittitas Counties

LAND OWNERSHIP

Most of the *Erigeron basalticus* subpopulations occur in areas with a combination of Federal, State, and/or private ownership. Two subpopulations occur entirely on private lands and one occurs entirely on State land. The ownership of the total area known to be occupied by the species is approximately 33 percent Federal, 22 percent State, and 45 percent private. Specific land ownership of each of the sites is displayed in Table 1.

LEAD REGION CONTACT Paul Phifer, Portland Regional Office, 503-872-2823, paul_phifer@fws.gov

LEAD FIELD OFFICE CONTACT Tim McCracken, Central Washington Field Office, Wenatchee, Washington, (509) 665-3508 Ext. 17.

BIOLOGICAL INFORMATION

Species Description

Erigeron basalticus is a perennial, herbaceous plant with a taproot and one to several sprawling stems 10 to 15 centimeters (cm) (4 to 6 inches (in)) long. The stems are leafy, especially towards the tip. Most of the leaves are about 2.5 cm (1 in) long, wedge-shaped, and three-lobed at the tip. The herbage is glandular and covered with stiff, spreading hairs. Branches have a single terminal flower. The showy flower is daisy-like, with 20 to 30 white to lilac ray flowers

about 0.6 cm (0.25 in) long surrounding a cluster of small disk flowers (Gamon 1998).

Taxonomy

The taxon is recognized as a distinct species (Hoover 1944). No other member of the genus with lobed leaves occurs within the range of the species (Gamon 1998). There is no known controversy concerning the taxonomy of this species.

Habitat/Life History

Erigeron basalticus grows in crevices in basalt cliffs on canyon walls, at elevations from 380 to 460 meters (1,250 to 1,500 feet), along the Yakima River Canyon and Selah Creek, a tributary of the Yakima River. It is found in microsites that are largely devoid of other vegetation and undergoing primary succession. There are few other species using nearby cliffs and outcrops. Total vegetative cover in these areas is about one percent. As the most abundant vascular plant present, this species may be important for insects and other fauna inhabiting the area, potentially serving as both cover and forage (Gamon 1998).

Very little is known about the life history of *Erigeron basalticus*. There is no evidence of reproduction other than by seed. The species is presumably dependent upon insects for pollination. The seeds are adapted for wind dispersal, although dispersal is probably augmented by rainfall washing the seeds down slope. The plants typically grow in crevices with virtually no soil, and the species likely contributes to soil formation at these sites (Gamon 1998). The plants' roots may contribute to fracturing of the basalt around the crevices and the plants' detritus likely adds organic matter.

Historical Range/Distribution

Erigeron basalticus was first collected in 1942, and first described in 1944 (Hoover 1944, as cited in Gamon1998). However, the status of the *Erigeron basalticus* population and its distribution prior to 1988 are unknown. In 1988, the range of the species was identified as the Yakima River Canyon and Selah Creek, an area of approximately 52 square kilometers (km^2) (20 square miles (mi^2)) in northern Yakima and southern Kittitas Counties, Washington (Gamon 1988). At that time, eight occurrences, or subpopulations, were recorded (Table 1).

Table 1. Change in status of identified *Erigeron basalticus* subpopulations between 1988 and 2000, and land ownership patterns within the species' known distribution (Gamon 1988, 1998), (D. Wilderman, Washington Department of Natural Resources (WDNR), pers. comm. 2005).
.

Site	**Estimated Area Occupied**	**Number Present, 1988**	**Number Present, 1998**	**Number Present, 2000**	**Land Ownership[a]**
1	20-24 ha (50-60 ac)	5000	5000	6000[b]	WDNR, Private, YTC, WDOT
2	24 ha (60 ac)	Hundreds	Hundreds	At least 2,539	BLM, Private, WDOT

Site	Estimated Area Occupied	Number Present, 1988	Number Present, 1998	Number Present, 2000	Land Ownership[a]
3[b]	4 ha (10 ac)	175-200	100	635	BLM, BNSF
4	2 ha (6 ac)	150-600	Thousands or 120-600[c]	Hundreds to thousands[c]	Private
5	<2 ha (<5 ac)	100-500	100-500	495	WDFW, BNSF
6	0.4 ha (1 ac)	62[d]	15[d]	69	WDFW
7	0.4 ha (1 ac)	100	12[d]	110	Private
8	8 ha (20 ac)	250	<100	765	BLM, Private

[a]/ WDNR: Washington Department of Natural Resources
YTC: US Army, Yakima Training Center
WDOT: Washington Department of Transportation
BLM: U.S. Bureau of Land Management
BNSF: Burlington Northern Santa Fe Railroad
WDFW: Washington Department of Fish and Wildlife

[b]/ Based on sub-sample of an estimated 60% of total sub-population[c]/ ACEC: BLM designated Area of Critical Environmental Concern.

[c]/ Contradictory estimates reported in 1998 status review: "Thousands," but a density of 20-100 plants per acre on 2 ha (6 ac).

[d]/ Plants directly counted.

Current Range/Distribution

Erigeron basalticus is currently found in the same areas along the Yakima River Canyon and Selah Creek that were identified in 1988. Extensive searches in similar habitat nearby have failed to reveal additional occurrences of the species. However, the upper reaches of some of the cliffs in the area have not been thoroughly inventoried, and there may be additional subpopulations of the species in these relatively inaccessible locations (Gamon 1998). Although the best and most recent information is from 5 years ago in 2000, there appears to be good evidence overall that the population is currently fluctuating within a range that does not appear to be threatening to the species. Monitoring of six *Erigeron* sites will continue to be conducted by the University of Washington in the summer of 2006.

Population Estimates/Status

As of the most recent survey in 2000, an estimated over 12,000 *Erigeron basalticus* plants exist,

with the population distributed among the same eight, potentially interbreeding subpopulations that occupy about 67 hectares (ha) (165 acres (ac) within the known distribution of approximately 52 km^2 (20 mi^2). The overall population size, both in number of individuals and total area occupied, remained relatively stable between 1988 and 1998 (Gamon 1988, 1998). However, the numbers of individuals in the four smallest subpopulations decreased substantially between those survey periods. Surveys undertaken in 2000 by WDNR staff report the numbers rebounded for all eight sub-populations and were similar or higher than those reported in 1988 and 1998 (D.Wilderman, WDNR, pers. comm. 2005).

THREATS

A. <u>The present or threatened destruction, modification, or curtailment of its habitat or range</u>.
A State highway, interstate highway, and railway have been constructed through habitat occupied by *Erigeron basalticus* (Gamon 1998). Road maintenance (e.g., herbicide spraying, rock exclusion fences, etc.), major improvement, or expansion of these transportation corridors may damage or destroy individual plants or their habitat. The State highway, at least, is now a secondary scenic route with little potential for expansion or major improvement (J. Mitchell, Yakima County Department of Roads, pers. comm. 1999, 2004). Currently there are no plans for major improvements or expansion of the Highway.

Basalt has been quarried at two locations where the species occurs, and at various other locations along the Yakima River (Gamon 1998). Currently, the county road department typically gets its gravel from mining operations along Selah Creek (J. Mitchell, pers. comm. 1999). Additional quarrying or expansion of existing quarries in the vicinity of the subpopulations could threaten the species. Currently there is no documentation of effects due to quarrying on *Erigeron basalticus* and there are currently no plans for quarrying or expansion of existing quarries in the vicinity of the species.

There is little development now occurring along the Yakima River Canyon. Current improvements to a local road, specifically the installation of a falling rock screen overlapping one of the smaller subpopulations, was implemented without apparent damage to individual plants at that location (D. Wilderman, WDNR, pers. comm. 2005).

Grazing does not appear to present a threat to *Erigeron basalticus* habitat, primarily due to the inaccessibility of the near-vertical, basalt cliffs the species occupies.

B. <u>Overutilization for commercial, recreational, scientific, or educational purposes</u>.
There is no evidence that overutilization of *Erigeron basalticus* for commercial, scientific, or educational purposes exists. However, small portions of several subpopulations may be subject to incidental impacts associated with recreational use by boaters that stop to picnic and camp along the Yakima River. Recreational boat use of the Yakima River has increased dramatically in recent years, with up to 500,000 visitors annually (P. Camp, Bureau of Land Management (BLM), pers. comm. 1997). *Erigeron basalticus* is attractive while in bloom and, occasionally, may be picked by recreational users or collected for rock gardens. One subpopulation is easily accessible from the highway. In addition, damage by rock climbers is a potential threat in some areas where there are rock formations that may attract recreational climbing. To date, evidence

of the species being picked, collected, or damaged by recreational activities has not been reported.

Population monitoring in 2000 reported increased numbers of individuals at all known sites for *Erigeron basalticus*, indicating the species may fluctuate within a range according to environmental conditions. In August, 2002, partial seed-heads from approximately 50 plants were collected from site two for scientific study and long term storage in the seed bank program at the Center for Urban Horticulture, University of Washington. At that time, the subpopulation at site two appeared to be vigorous and contained a large number of individuals (L. Zybas, University of Washington, pers. comm. 2003).

C. Disease or predation.
There are no known threats to *Erigeron basalticus* from disease or predation (i.e., herbivory).

D. The inadequacy of existing regulatory mechanisms.
There is some regulatory protection for *Erigeron basalticus* on the ownership parcels where it is found. Five subpopulations occur on lands administered by the BLM. By policy, the BLM must ensure that any actions it authorizes, funds, or carries out do not contribute to the need to list candidate species. The five BLM parcels supporting *Erigeron basalticus* are designated as Areas of Critical Environmental Concern (ACEC). The ACEC designations indicate to the public that the BLM recognizes that an area has significant values and has established special management measures to protect these values. Currently, the BLM policy related to ACEC designation is to treat candidate species as if they are listed, although a management plan considering the species has not been completed specifically for *Erigeron.* The species also occurs on Federal land of the Yakima Training Center (YTC), administered by the U.S. Department of the Army, but is given no special protection on the installation.

One entire subpopulation of *Erigeron basalticus* and a portion of another are found on lands administered by Washington Department of Fish and Wildlife where there is limited protection provided from Department activities due to the species designation as State Threatened. In addition, a significant portion of a third subpopulation occurs in an area managed by the WDNR as a Natural Area Preserve, with *Erigeron basalticus* identified as the primary resource of concern at the preserve. Finally, the Washington Department of Transportation manages portions of two subpopulations that occur within highway rights-of-way, where effects of Department activities have been minimized or avoided without the benefit of a management plan for *Erigeron*.

Erigeron basalticus is State-listed as Threatened, with a G2 (i.e., imperiled world-wide, very vulnerable to extinction) global ranking and an S2 (i.e., very vulnerable to extirpation) State ranking (WDNR 2004). However, while *Erigeron basalticus* is designated as a State threatened species, there is no State legislation comparable to the Federal Endangered Species Act for plants in Washington. As such, the State classification confers no formal protection from activities by the general public to the species.

E. Other natural or manmade factors affecting its continued existence.

The limited range, extremely limited habitat, and the small number and size of the subpopulations make *Erigeron basalticus* vulnerable to environmental and demographic stochasticity. A localized heavy rainfall event in 1998 resulted in significant landslides in the Yakima River Canyon. None of the species' subpopulations were affected, but future landslides may impact the species (Gamon 1998). Spray drift from the use of herbicides on agricultural fields and transportation right-of-ways adjacent to habitats occupied by *Erigeron basalticus* may destroy existing plants (Gamon 1998). The declines may also result in part from poor reproductive success, possibly because of insufficient pollination, reducing recruitment of new plants. Spray drift of pesticides on adjacent fields is a threat to the insects necessary for pollination (Gamon 1998).

Recreational activities such as climbing on the slopes above sites two and eight may inadvertently loosen the basalt formations and cause talus to cover portions of these subpopulations. Deliberate efforts to remove talus for safety or commercial purposes at these sites could have the same result. Evidence of loose talus covering plants was observed in August, 2002 (L. Zybas, pers. comm. 2003).

CONSERVATION MEASURES PLANNED OR IMPLEMENTED

Preliminary discussions concerning the possible development of a Candidate Conservation Agreement (CCA) with the BLM and YTC for *Erigeron basalticus* occurred in 1995, but there have been no follow-up discussions.

SUMMARY OF THREATS (including reasons for addition or removal from candidacy, if appropriate)

The numbers for the population at large have fluctuated within a range, but appear to be relatively stable since 1988. To date, the threats described above have not been observed to affect numbers, distribution, or recruitment of *Erigeron basalticus.* Because the last useful population information was collected in 2000, monitoring by the University of Washington in 2006 will provide data on the species current status which will be available for the 2006 Notice of Review.

LISTING PRIORITY

THREAT			
Magnitude	Immediacy	Taxonomy	Priority
High	Imminent	Monotypic genus	1
		Species	2
		Subspecies/population	3
	Non-imminent	Monotypic genus	4
		Species	5
		Subspecies/population	6
Moderate	Imminent	Monotypic genus	7

to Low	**Non-imminent**	Species Subspecies/population Monotypic genus **Species** Subspecies/population	8 9 10 11* 12

Rationale for listing priority number:
Magnitude: The available information indicates that *Erigeron basalticus* is a narrow endemic that occurs on a limited habitat type. Several of the species' smaller subpopulations have declined in the past decade. However, the major portion of the population appears to have remained stable during this same period. A significant portion of one subpopulation occurs in an area managed by the WDNR as a Natural Area Preserve, with *Erigeron basalticus* as the primary resource of interest. The area in which the species is known to occur on BLM land is designated as an ACEC, with *Erigeron basalticus* as the primary resource of concern. In addition, conservation measures to protect the species from the potential threats that have been identified are well suited for inclusion in a CCA that could be pursued with other Federal and State agencies, and/or with private landowners. Currently, little is known about the species' life history or the causes of the documented declines in several subpopulations. The species' habitat does not lend itself to significant development or conversion, but is subject to localized disturbances. Based on the above, we consider the magnitude of threat to *Erigeron basalticus* to be moderate to low.

Imminence: The cause(s) and extent of past declines in *Erigeron basalticus* are not fully understood, nor is the risk to the extant subpopulations. Future development involving the canyon walls could severely impact the species, but none is currently anticipated. While various potential threats to the species have been identified, we consider these threats as non-imminent.

yes Have you promptly reviewed all of the information received regarding the species for the purpose of determining whether emergency listing is needed?

Is Emergency Listing Warranted? No, the population is relatively stable and there are no indications that any of the potential threats are imminent or likely to be severe.

DESCRIPTION OF MONITORING
Monitoring of *Erigeron basalticus* is currently limited to querying the various State personnel and other experts who may have gathered on-site information. We contact these experts on an annual basis. We consider this level of monitoring to be sufficient for this species, because of its relatively secure locations on basalt cliffs and a lack of imminent threats in these areas. There has been no formal population monitoring of the species since 2000 (F. Caplow, WDNR, pers. comm. 2004), however, the Rare-Care center of the University of Washington has agreed that population level monitoring of this species will be a priority in 2006. Although there was no reporting of activity in 2005, a graduate student is currently studying the pollination ecology of *Erigeron basalticus* to be completed in 2006 (D.Wilderman, WDNR, pers. comm. 2005).

For preparation of this assessment, we researched our files, reviewed a recent petition requesting

that *Erigeron basalticus* be listed as threatened under the (CBD et al. 2004), and queried knowledgeable individuals and land managers.

COORDINATION WITH STATES
Indicate which State(s) (within the range of the species) provided information or comments on the species or latest species assessment: Washington

Indicate which State(s) did not provide any information or comments:

LITERATURE CITED

Alverson, E., and M. Sheehan. 1986. Status report on *Erigeron basalticus*. Natural Heritage Program, Washington Department of Natural Resources, Olympia, Washington.

Camp, P. 1997. Map of BLM ownership and recreational use statistics for the Yakima River Canyon. Wenatchee Resource Area, Bureau of Land Management, Wentachee, Washington. Unpublished agency report on file.

Center for Biological Diversity, et al. 2004. Petition to the Department of the Interior to place 225 candidate species on the endangered species list.

Gamon, J. 1988. Report on the Status of *Erigeron basalticus* Hoover. Natural Heritage Program, Washington Department of Natural Resources, Olympia, Washington. Unpublished agency report on file.

Gamon, John G. 1998. Report on the Status of *Erigeron basalticus* Hoover. Natural Heritage Program, Washington Department of Natural Resources, Olympia, Washington. Unpublished agency report on file.

Hoover, R. F., 1944, Three new species from the state of Washington, Leafl. West. Bot. 4:38-41.

Washington Department of Natural Resources. 2004. Natural Heritage Program website, www.dnr.wa.gov/nhp/

APPROVAL/CONCURRENCE: Lead Regions must obtain written concurrence from all other Regions within the range of the species before recommending changes, including elevations or removals from candidate status and listing priority changes; the Regional Director must approve all such recommendations. The Director must concur on all resubmitted 12-month petition findings, additions or removal of species from candidate status, and listing priority changes.

Approve: Acting _____ 11/16/05
Regional Director, Fish and Wildlife Service Date

Concur: _____ August 23, 2006
Director, Fish and Wildlife Service Date

Do not concur: _____
Director, Fish and Wildlife Service Date

Date of annual review:
Conducted by: